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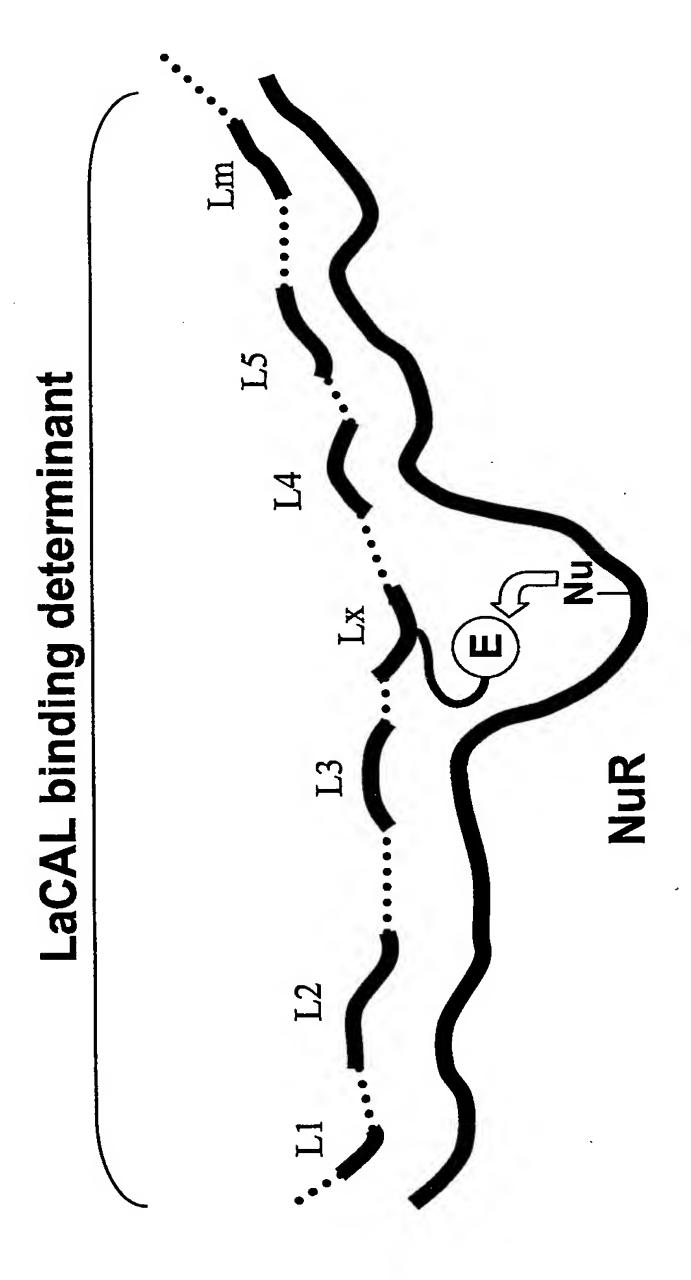
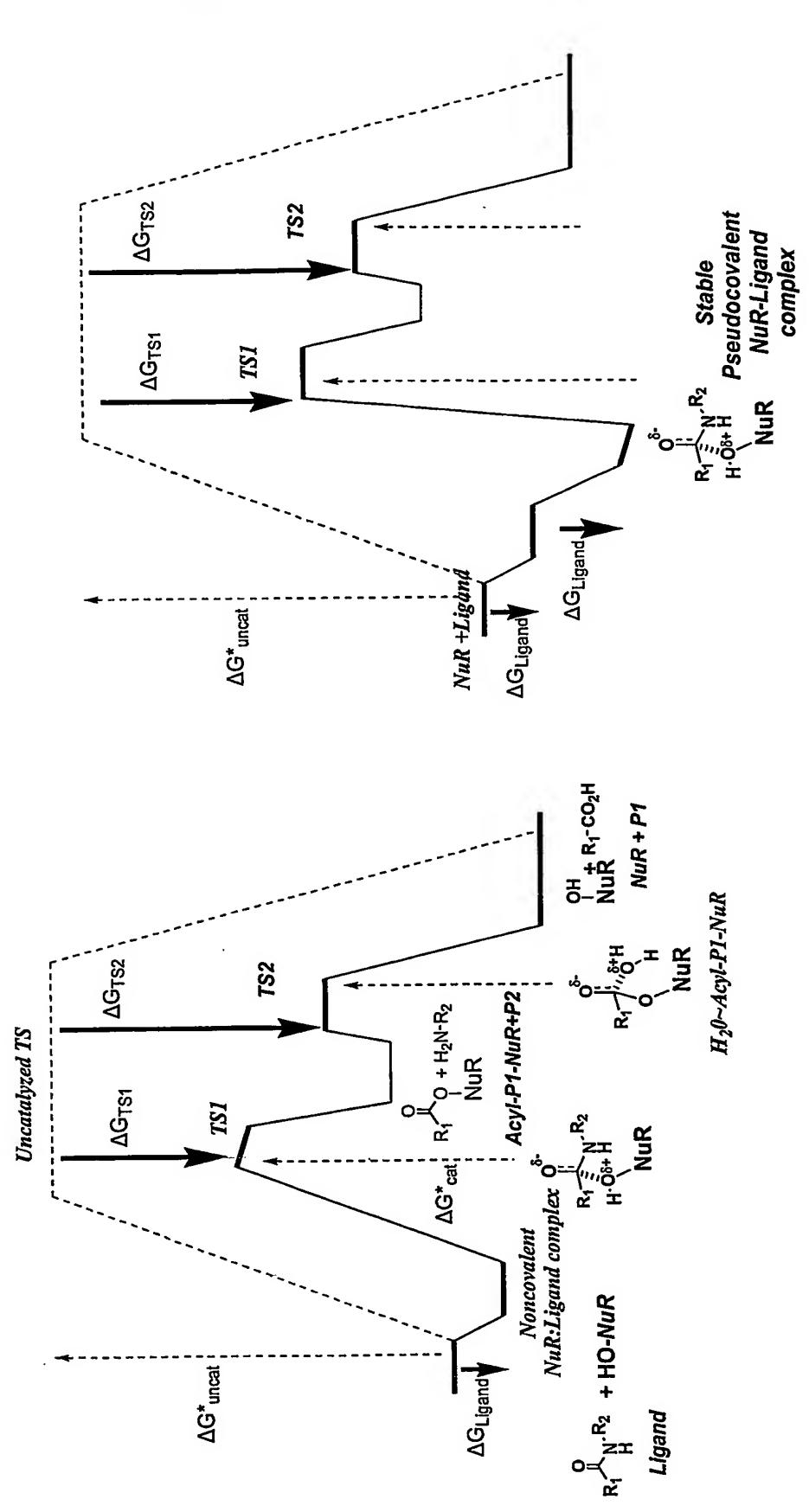


Fig 2

Catalysis and covalent binding energies of proteins Fig 3



L' =sulfhydryl group of Cys

Fig

General structure of LaCAL

L'-Y"-Y, Example 1

L'-Y"-Y, Example 3

L'-Y"-Y, Example 2

L' =
$$\epsilon$$
-amino group of Lys
$$V'' = \gamma$$
-maleimidobutyryl group
$$V'' = \gamma$$
-maleimidobutyl group
$$V'' = \gamma$$
-maleim

Fig 5B

Fig 5C

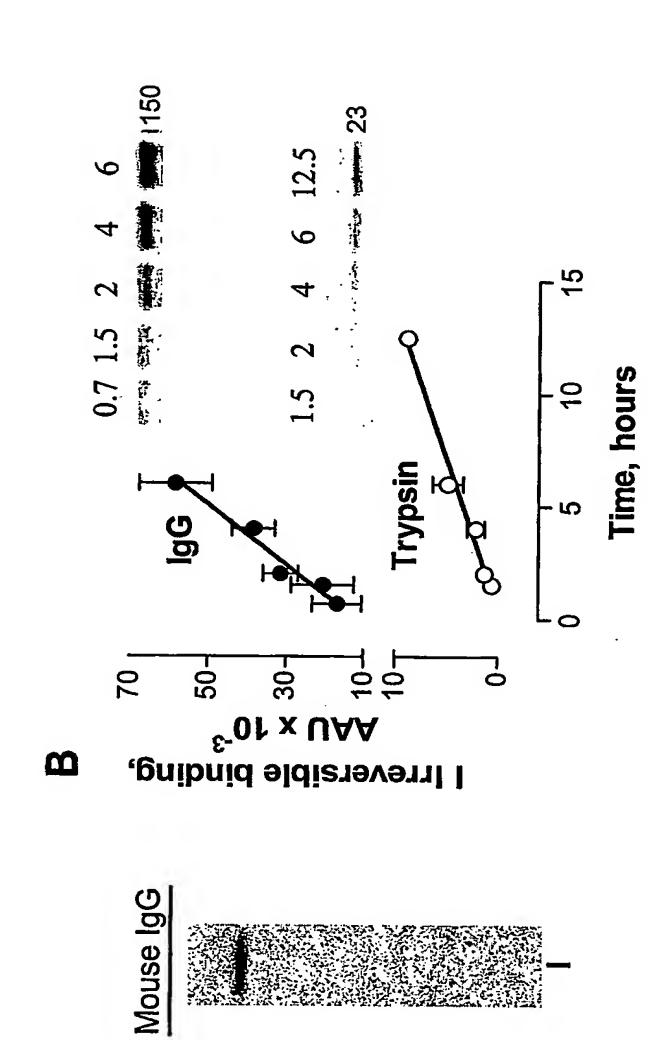
Fig 5D

A. Electron withdrawing substituents with peptide extension

B. Electron donating substituents with peptide extension

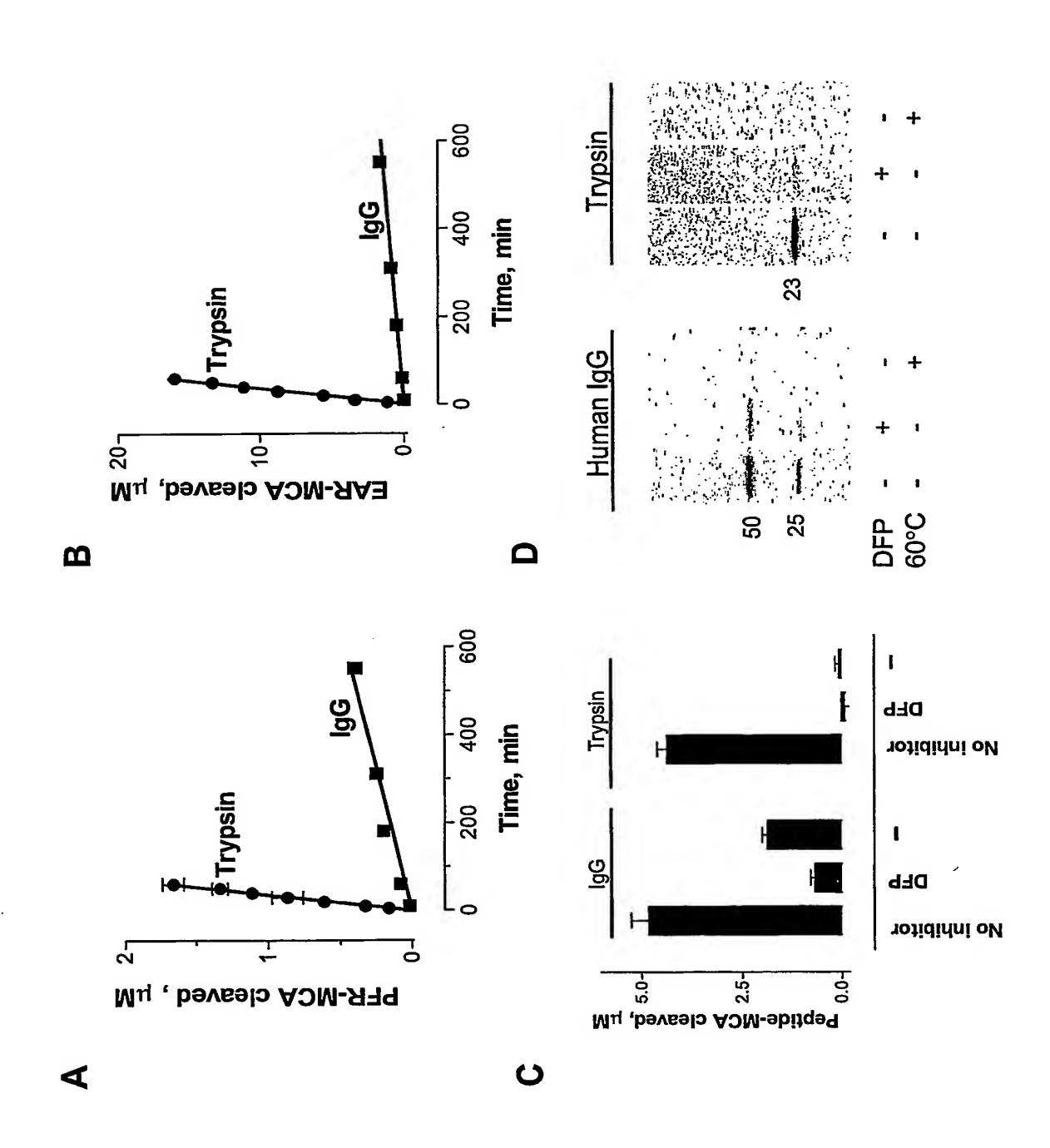
Fig 6

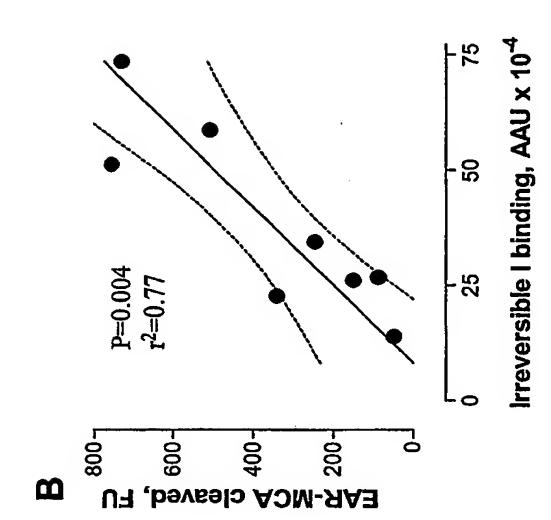




Hapten CAL

Human IgG





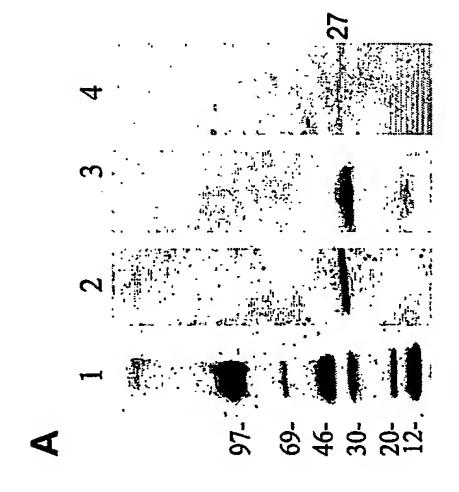
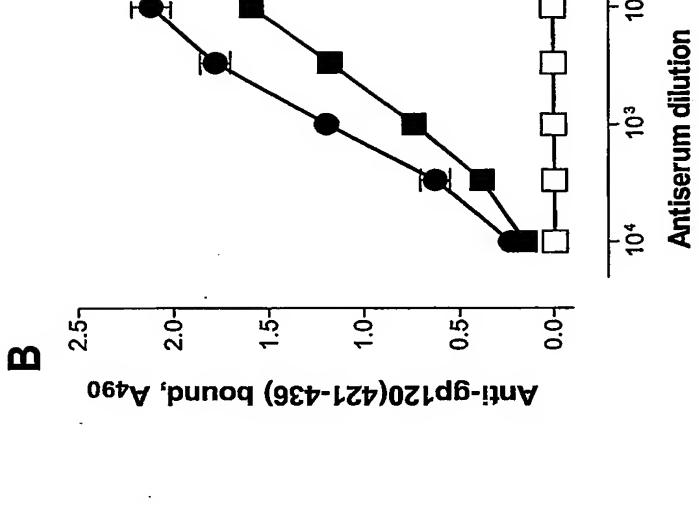
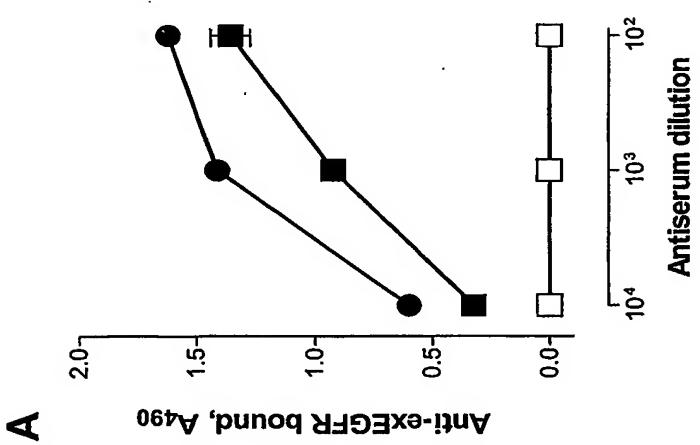


Fig 9







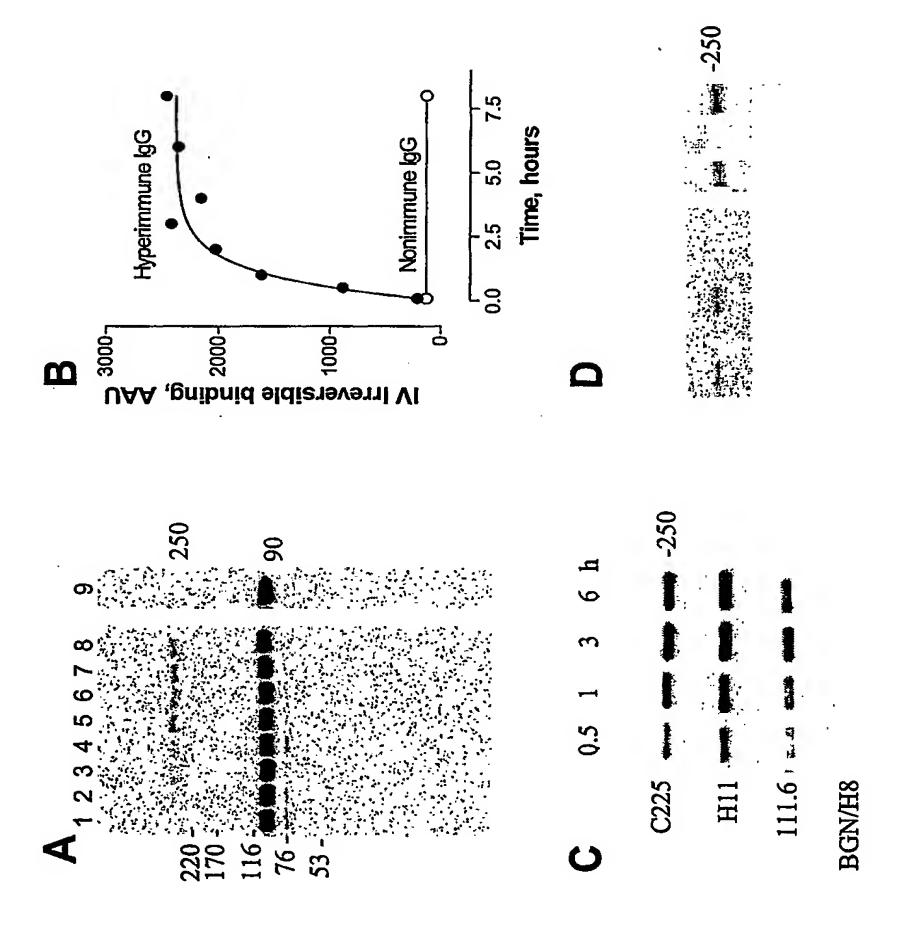


Fig 11

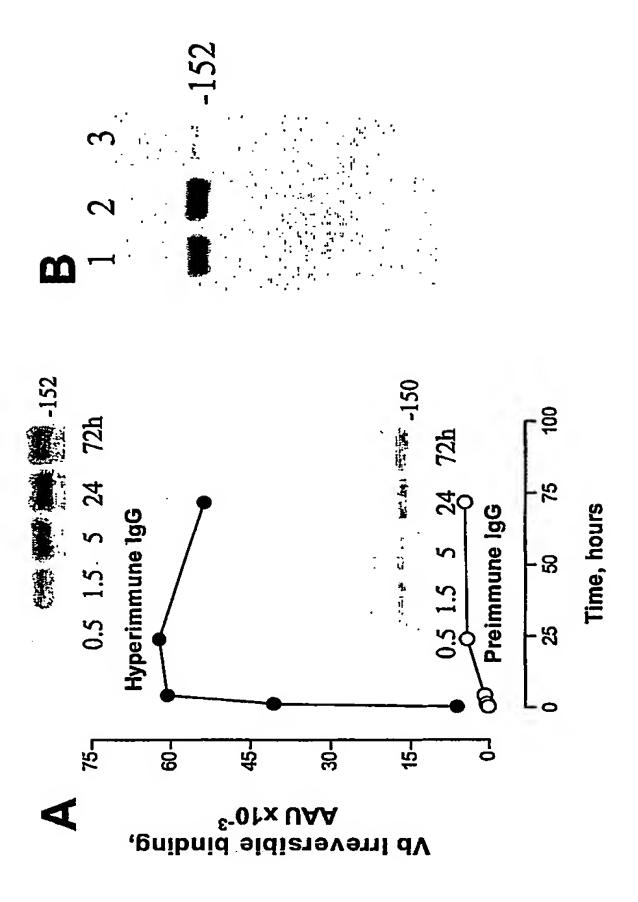


Fig 12

HIN NH₂

R-N P-O

1: R = 6-(D-biotinamido)hexanoyl

2: R = O-succinimidylsuberyl

4: R = 6-(D-biotinamido)suberyl

4: R = 6-(D-biotinamido)hexanoyl

5: R = 0-succinimidylsuberyl

4: R = 6-(P-biotinamido)hexanoyl

5: R = 0-succinimidylsuberyl

4: R = 6-(P-biotinamido)hexanoyl

5: R = 10-succinimidylsuberyl

5: R = 10-succinimidylsuberyl

6: R = 10-succinimidylsuberyl

7: R = 6-(P-biotinamido)hexanoyl

7: R = 6-(P-biotinamido)hexanoyl

8: R = 10-succinimidylsuberyl

9: R = 10-succinimidylsuberyl

9: R = 10-succinimidylsuberyl

10: R = 10-succinimidylsuberyl

11: R = 6-(P-biotinamido)hexanoyl

12: R = 10-succinimidylsuberyl

13: R = 10-succinimidylsuberyl

14: R = 10-succinimidylsuberyl

15: R = 10-succinimidylsuberyl

16: R = 10-succinimidylsuberyl

17: R = 10-succinimidylsuberyl

18: R = 10-succinimidylsuberyl

19: R = 10-succinimidylsuberyl

10: R = 10-succinimidyls

R-His-Ser-Asp-Ala-Val-Phe-Thr-Asp-Asn-Tyr-Thr-Arg-Leu-Arg-Lys-Gln-Met-Ala-Val—N = D-biotinyl 3. R

Fmoc-Asn(Trt)—H—

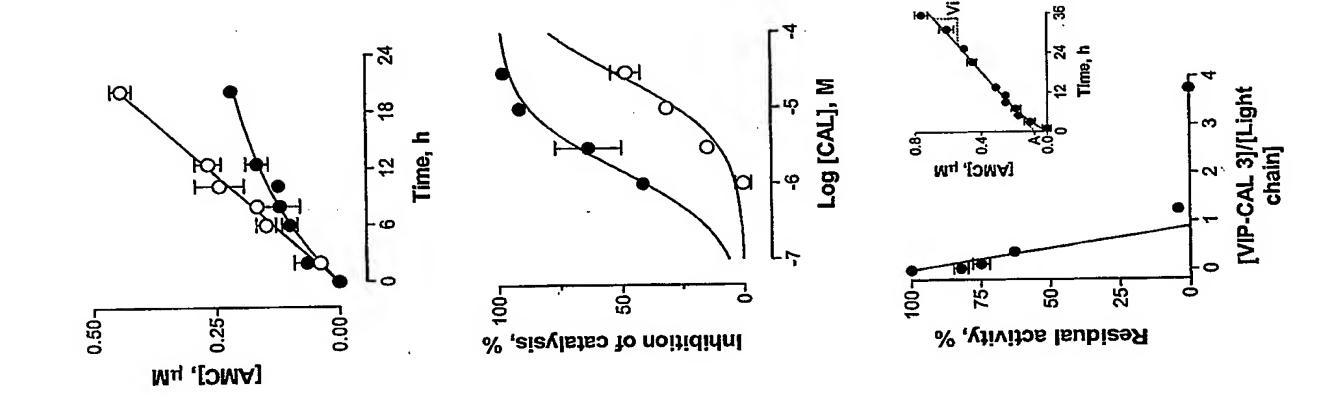
R₁-His-Ser-Asp-Ala-Val-Phe-Thr-Asp-Asn-Tyr-Thr-Arg-Leu-Arg-Lys-Gln-Met-Ala-Val-L Boc tBuO tBuO tBu Pmc Boc

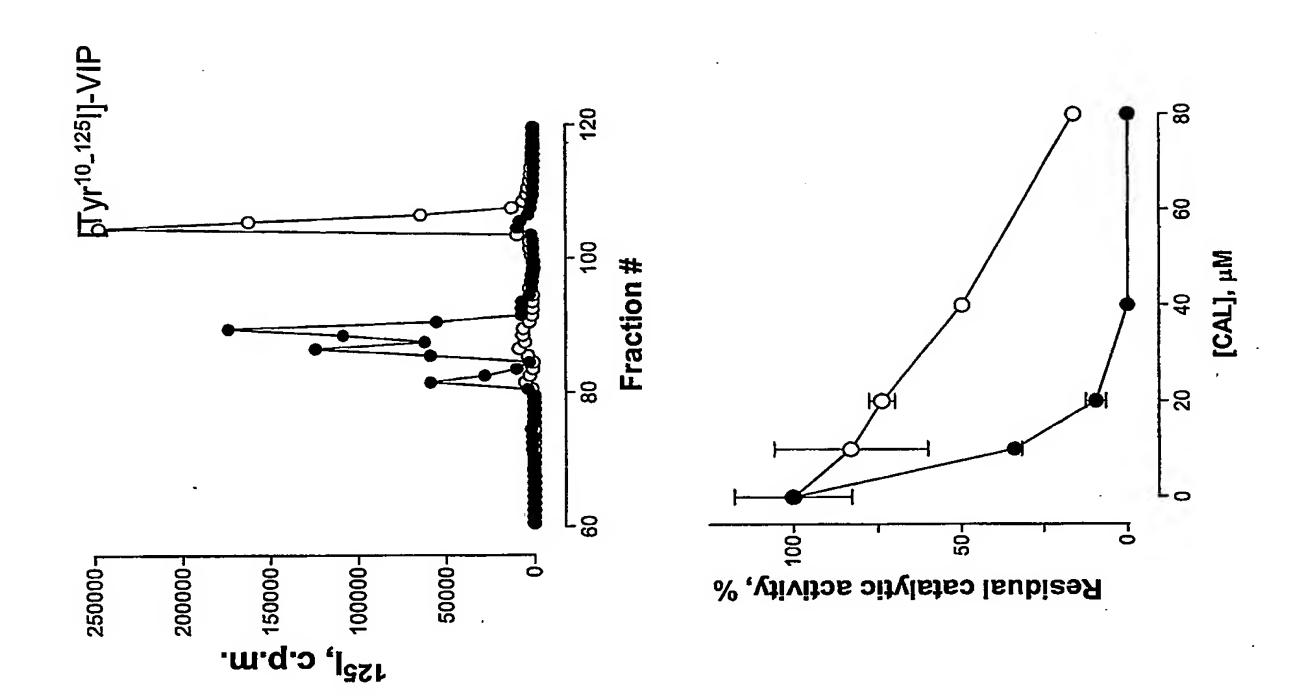
tBuO tBu Pmc Boc ii, iii 4a (R₁=Fmoc; R₂=Mtt)
iv 4b (R₁=D-biotinyl; R₂=Mtt)
$$v, vi$$

$$v, vi$$

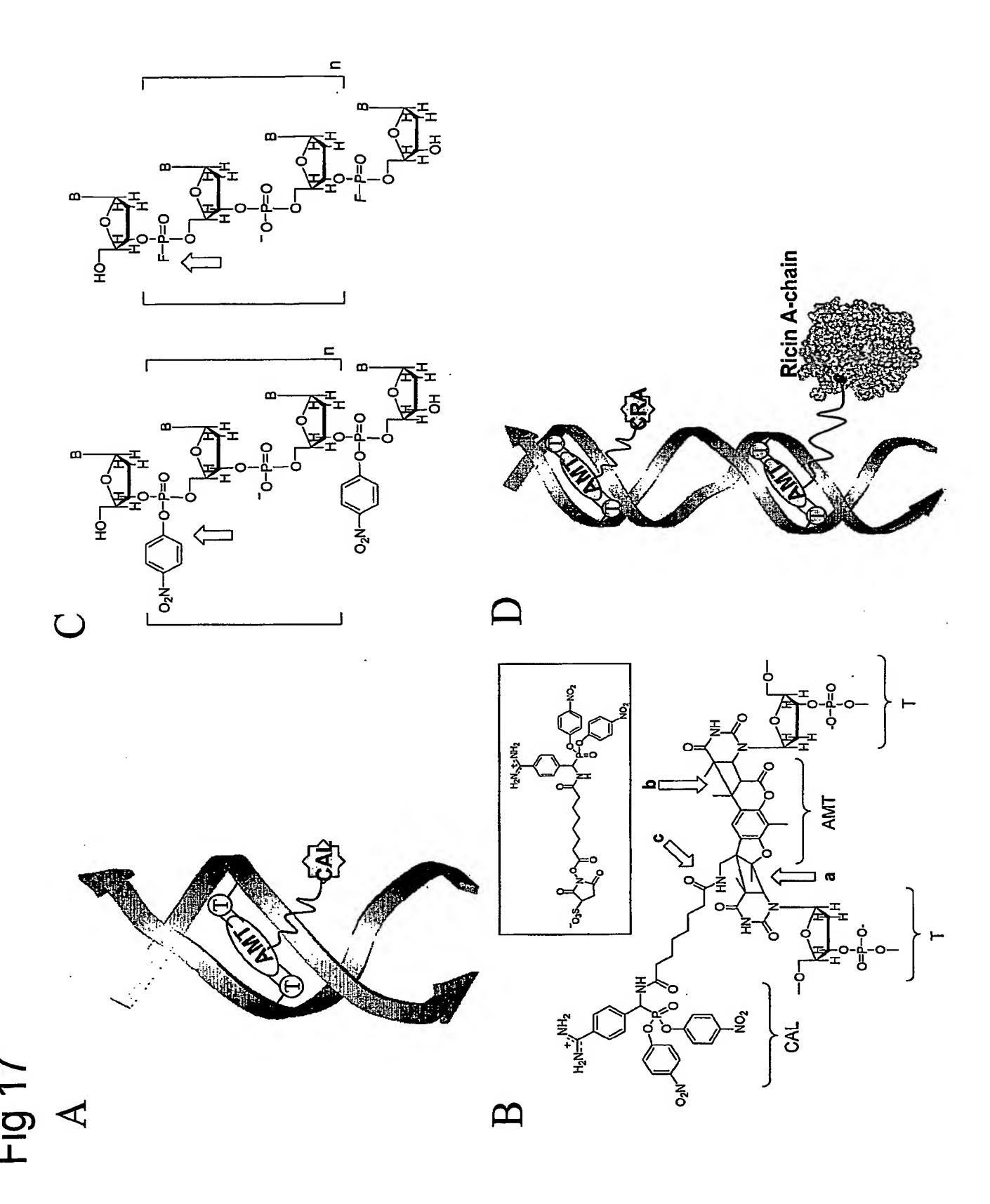
: Solid support

 \Box





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$$\begin{array}{c} \text{FN} \\ \text{FN} \\ \text{NH} \\$$

O H

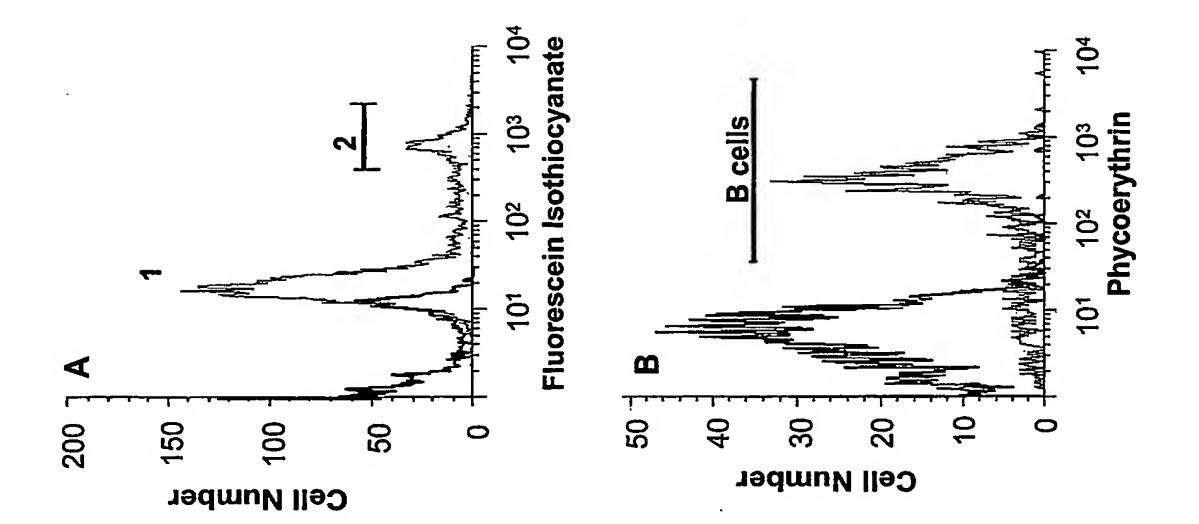


Fig 20

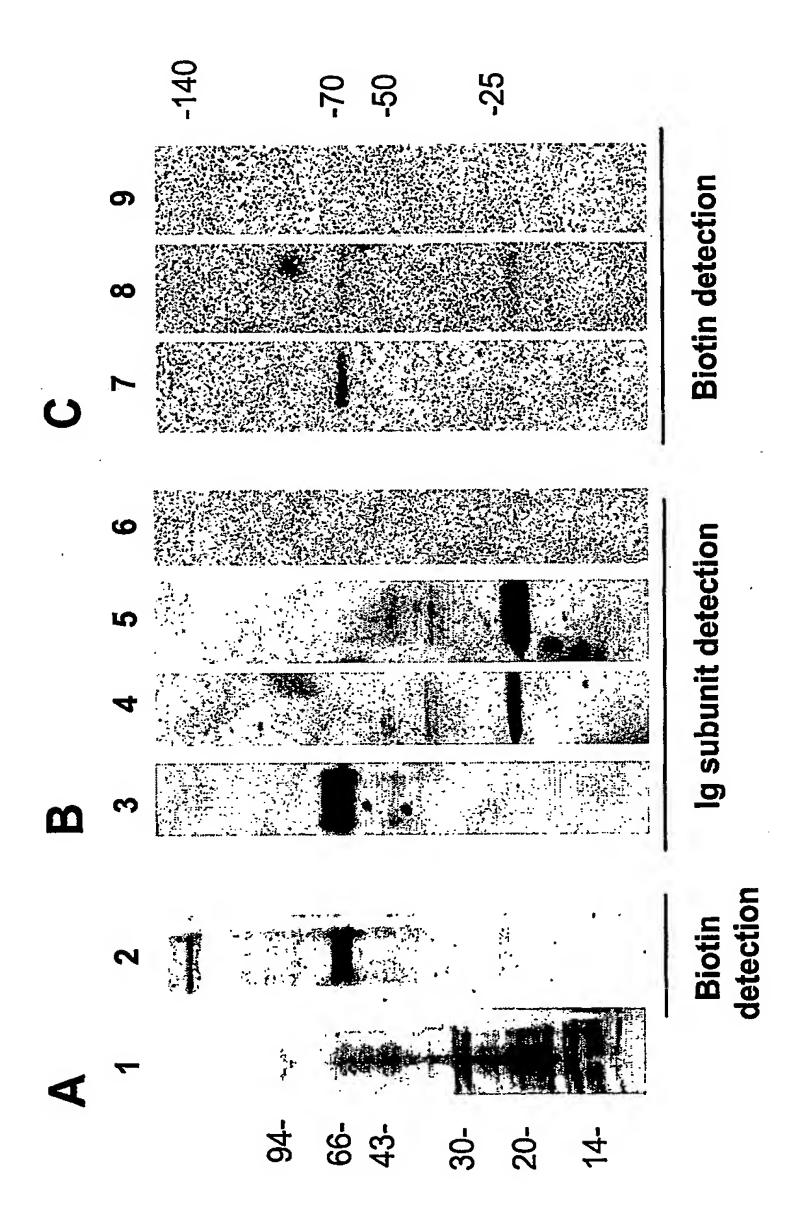
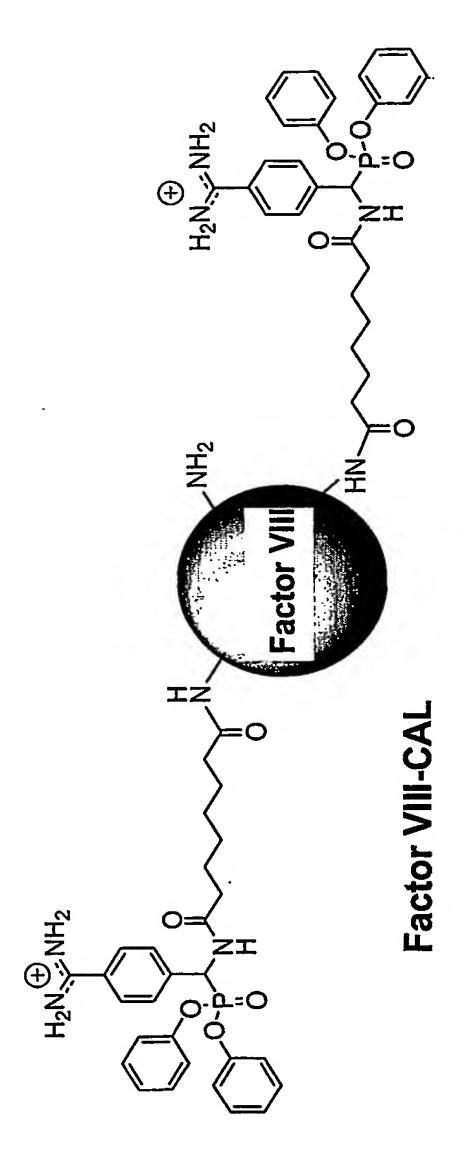
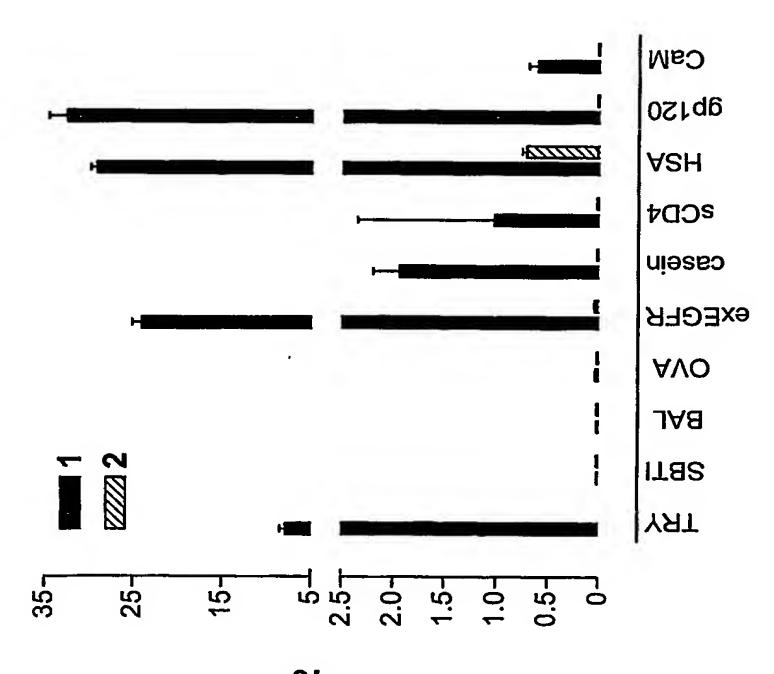
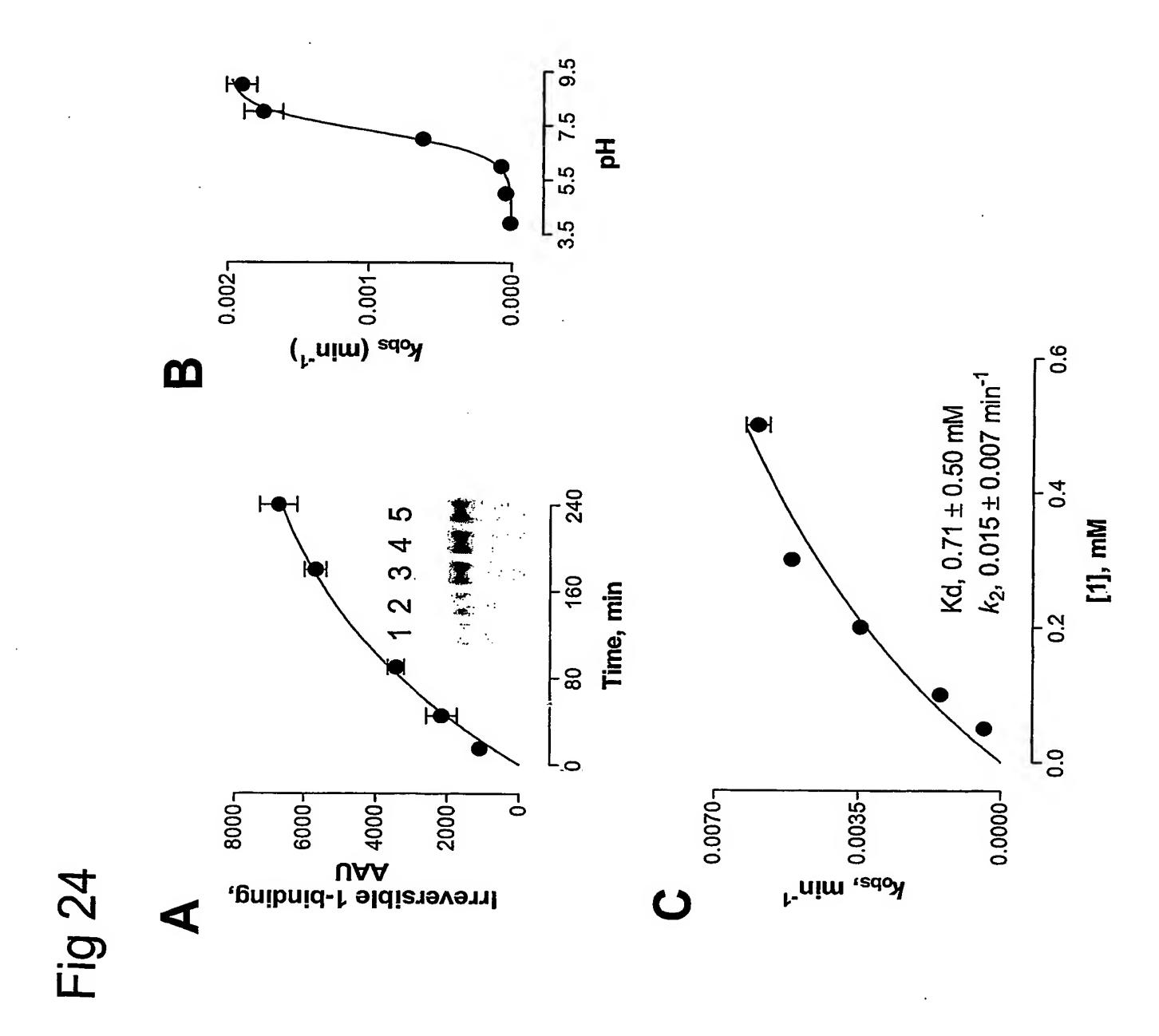


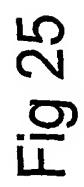
Fig 21

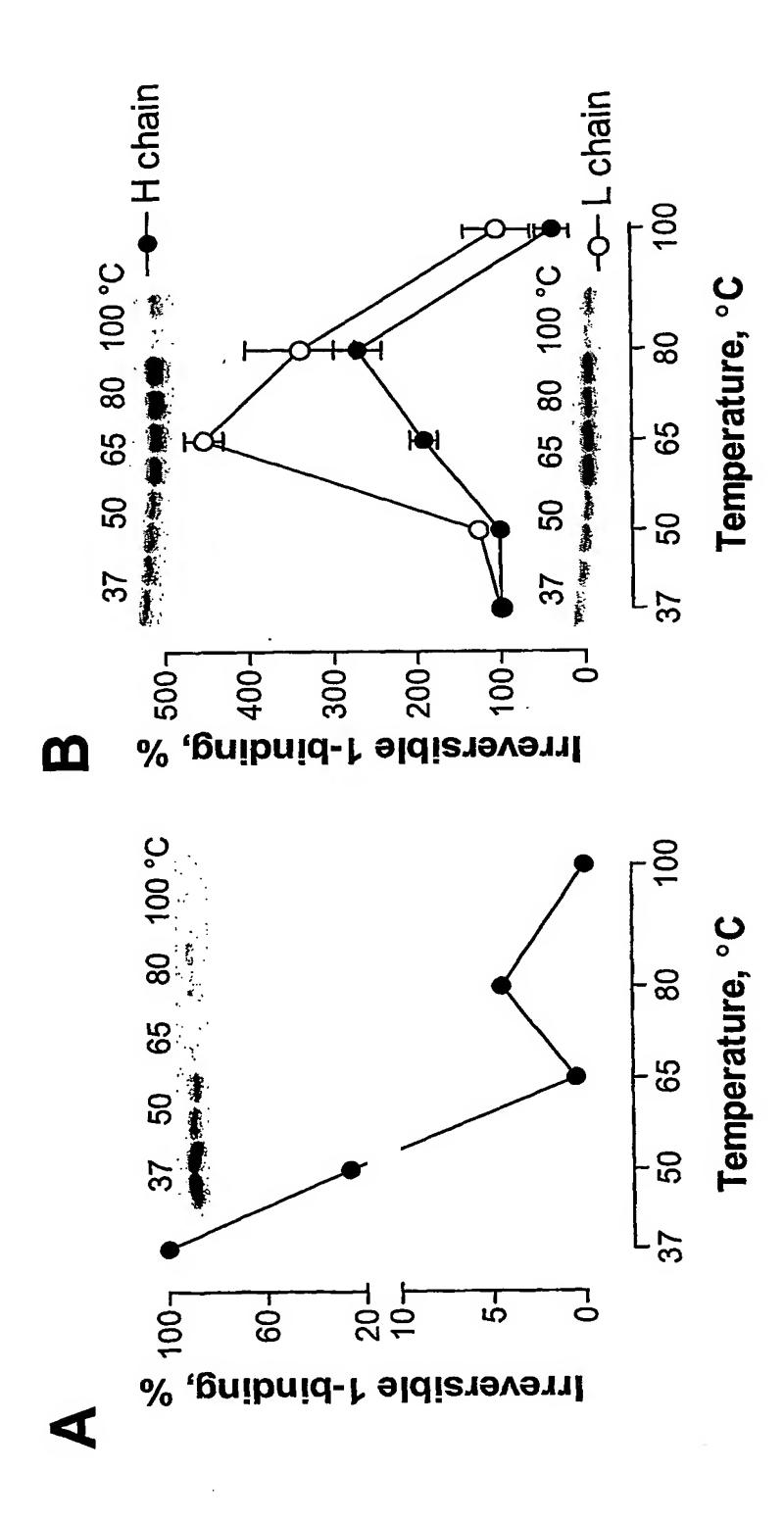


Irreversible 1- or 2-binding, AAU \times $^{10^3}$









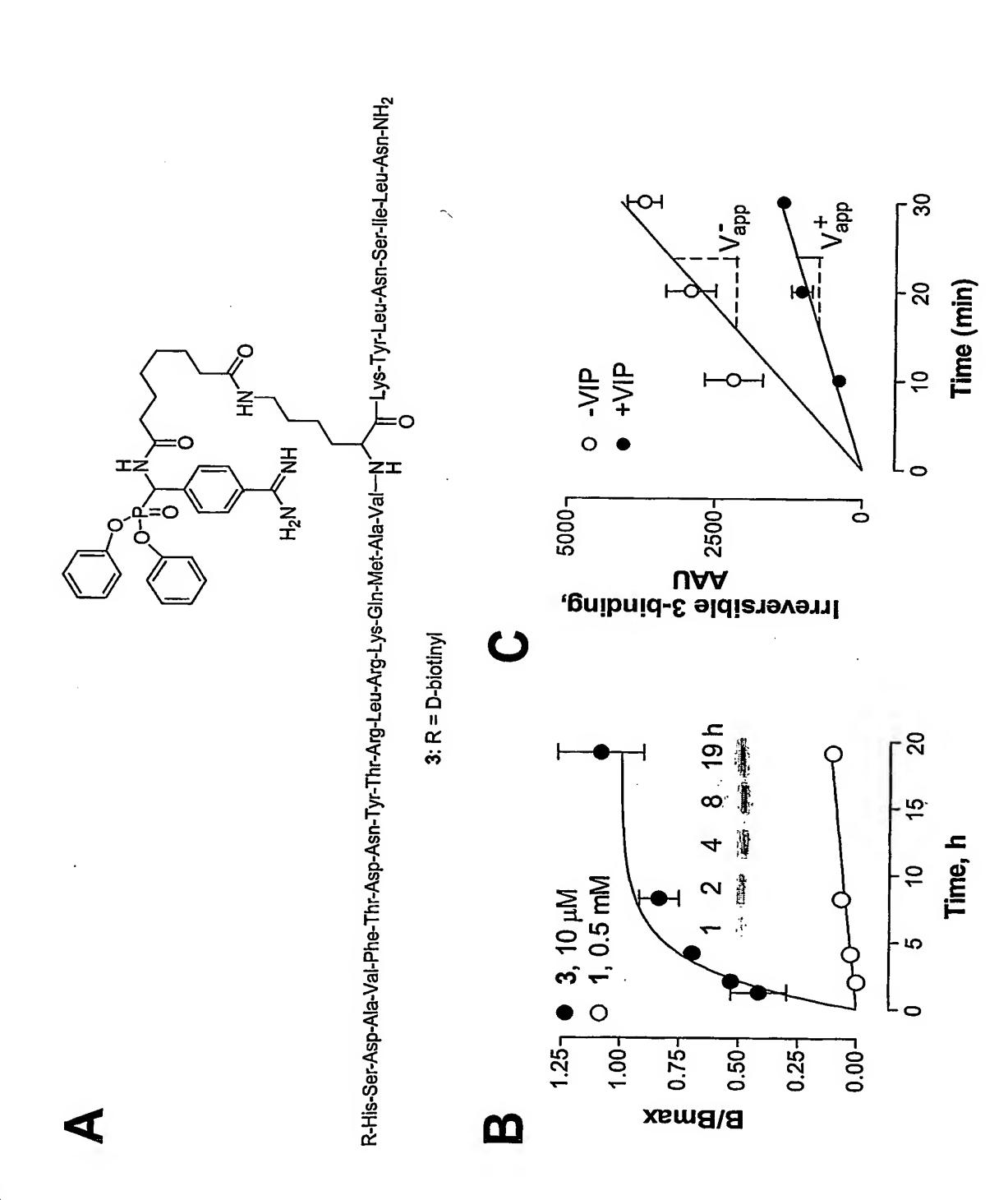
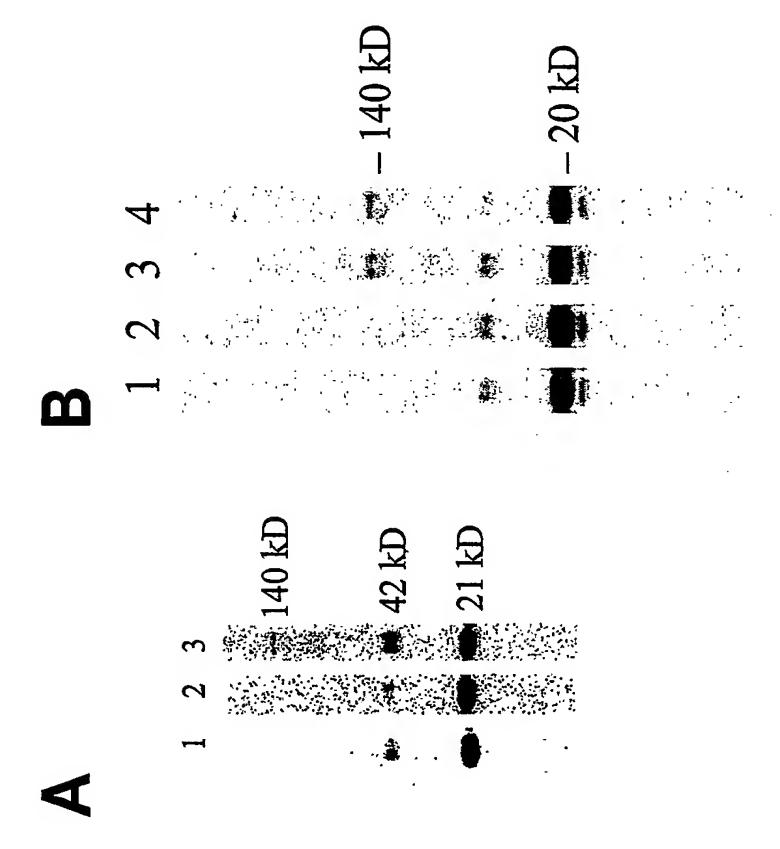
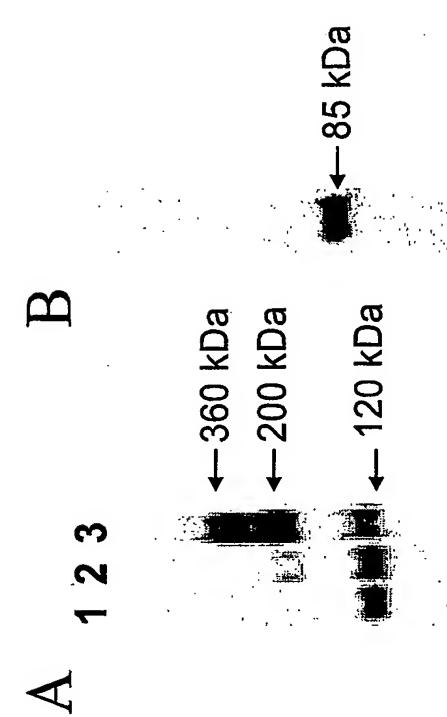


Fig 27





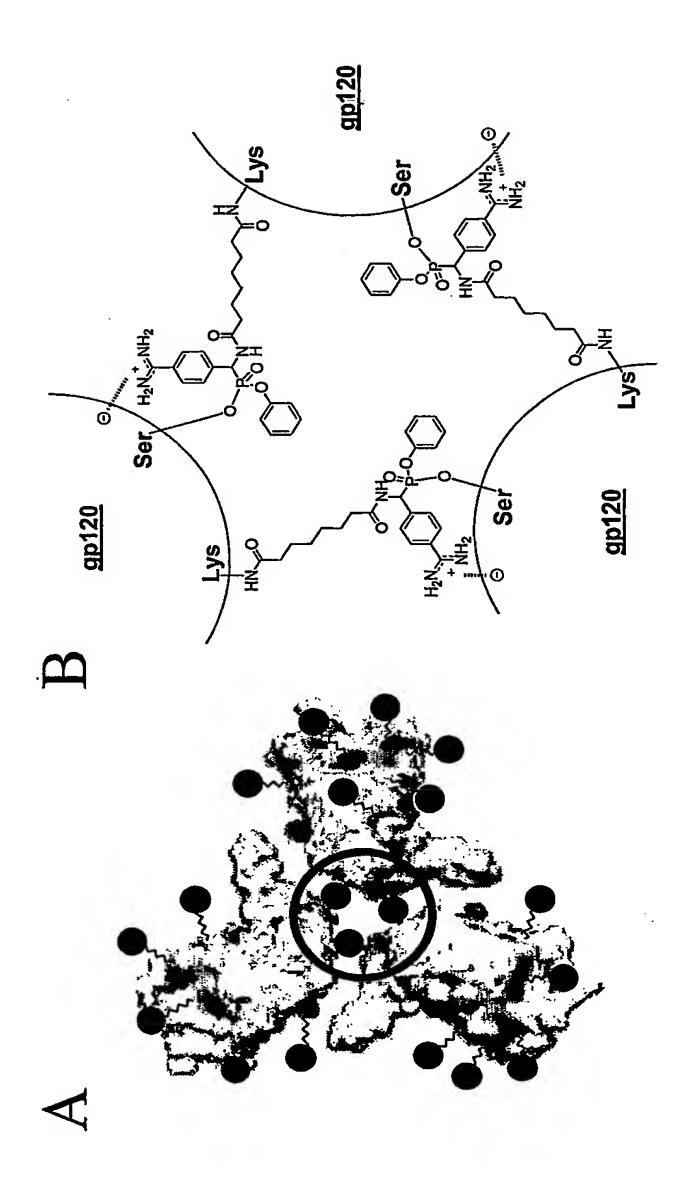
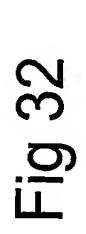
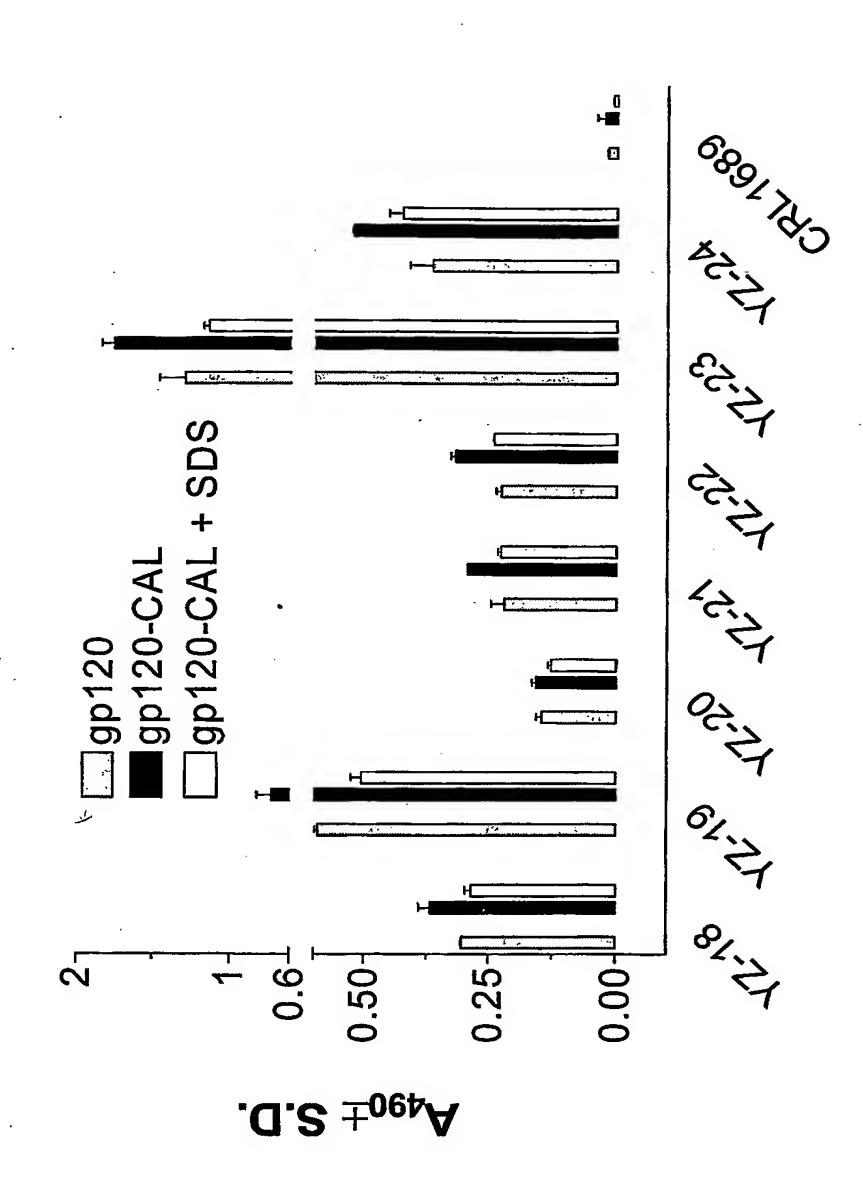
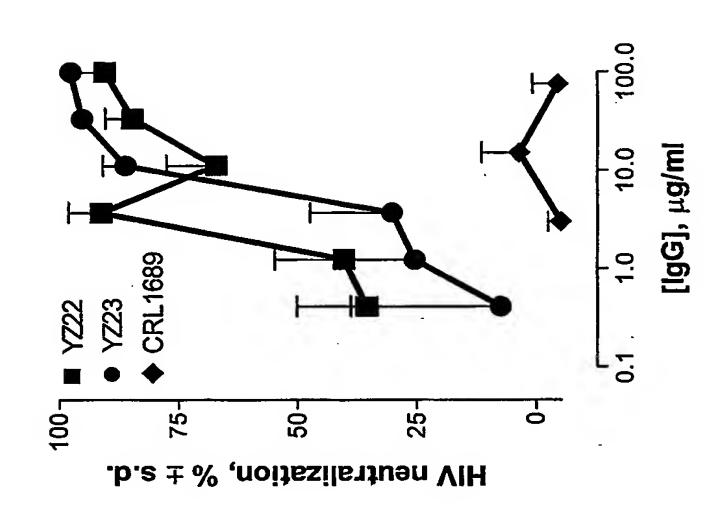


Fig 31









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